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A.D. 1852 . . . . . N° 190.

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S P E C I F I C A T I O N

OF

JAMES ANDERSON YOUNG.

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DENTAL OPERATIONS AND APPARATUS  
USED THEREIN.

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LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWODE,

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1852.





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A.D. 1852 . . . . . N° 190.

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**Dental Operations and Apparatus used therein.**

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**LETTERS PATENT** to James Anderson Young, of the firm of A. S. Young and Son, of 185, Buchanan Street, Glasgow, in the County of Lanark, North Britain, Surgeon Dentist, for the Invention of "**CERTAIN IMPROVEMENTS IN DENTAL OPERATIONS, AND IN APPARATUS OR INSTRUMENTS TO BE USED THEREIN.**"

Sealed the 8th December 1852, and dated the 2nd October 1852.

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**PROVISIONAL SPECIFICATION** left by the said James Anderson Young at the Office of the Commissioners of Patents, with his Petition, on the 2nd October 1852.

I, JAMES ANDERSON YOUNG, of the firm of A. S. Young and Son, 5 of 185, Buchanan Street, Glasgow, in the County of Lanark, North Britain, Surgeon Dentist, do hereby declare the nature of the said Invention for "**CERTAIN IMPROVEMENTS IN DENTAL OPERATIONS, AND IN APPARATUS OR INSTRUMENTS TO BE USED THEREIN,**" to be as follows:—

This Invention relates to improved forms and arrangements of for-  
10 ceps. The improvements are to be described forming eleven different branches: First, constructing the forceps with open heads, so as to enable the operator to see distinctly what he is doing at the tooth and



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roots. Second, parting the opening of the heads of the beaks at any angle with the meeting of the points, the object in most cases being that the points only should meet upon the root of the tooth; the head of the latter being free from pressure to avoid crushing, with the angle properly set, the mere pressure of the beaks will, in many cases, bring out the tooth 5 without any pulling. Third, angling the internal concavity of the beaks so as to allow the beaks to grasp firmly any sized root by bearing upon it by four different surfaces. Fourth, bringing the beaks to a sharp angular point so that they may be easily and quickly forced between the jaw and the root, whether the latter is large or small. Fifth, 10 making an angular or other plate in the palatal beak of forceps for the upper molar or other beaks having the internal angled concavity, thereby bringing the beak to two sharp angular points. Sixth, constructing the beaks so as in all cases to act only on the roots, the same forceps being applicable either for teeth or roots, or children's teeth. 15 Seventh, making the handles and bodies of instruments all of one particular shape, the curved shape giving the operator sufficient direct pressure to fix the instrument and remove the tooth easily, whilst his vision is unobstructed. Eighth, separating the handles from the bodies, so that one pair of handles may serve any number of heads. Ninth, 20 separating the beaks from the blades of the instrument, one head or body serving any number of beaks. Tenth, a peculiar mode of fitting the handles and beaks. Eleventh, the insertion of small screw corrugated or serrated wedges in roots where great decay has taken place to prevent crushing. 25

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**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said James Anderson Young in the Great Seal Patent Office, on the 1st April 1853.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JAMES ANDERSON YOUNG, of the firm of A. S. Young & Son, of 185, 30 Buchanan Street, Glasgow, in the County of Lanark, North Britain, Surgeon Dentist, send greeting.**



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**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Second day of October, in the year of our Lord One thousand eight hundred and fifty-two, in the sixteenth year of Her reign, did, for Herself, Her heirs and successors, give and  
5 grant unto me, the said James Anderson Young, Her special licence that I, the said James Anderson Young, my executors, administrators, and assigns, or such others as I, the said James Anderson Young, my executors, administrators, or assigns, should at any time agree with, and no others from time to time and at all times thereafter during the term there-  
10 in expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**CERTAIN IMPROVEMENTS IN DENTAL OPERATIONS, AND IN APPARATUS OR INSTRUMENT TO BE USED THEREIN,**" upon the condition (amongst others) that I, the said James  
15 Anderson Young, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention; and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

**NOW KNOW YE**, that I, the said James Anderson Young, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the Drawing hereunto attached, and to the letters and figures marked thereon (that is to say):

25 My said Invention relates essentially to various arrangements of mechanism, apparatus, or means for increasing the efficiency and portability of the forceps or dental instruments employed in the extraction of teeth; the essential features of my plans being: First, constructing the forceps with open heads, so as to enable the operator to see dis-  
30 tinctly what he is doing at the tooth and roots. Second, parting the opening of the heads of the beaks at any angle with the meeting of the points, the object in most cases being that the points only should meet upon the root of the tooth; the head of the latter being free from pressure to avoid crushing, with the angle properly set, the mere pressure of  
35 the beaks will, in many cases, bring out the tooth without any pulling.



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Third, angling the internal concavity of the beaks so as to allow the beaks to grasp firmly any sized root by bearing upon it by four different surfaces. Fourth, bringing the beaks to a sharp angular point so that they may be easily and quickly forced between the jaw and the root; whether the latter is large or small. Fifth, making an angular or other cleft in the palatal beak of forceps for the upper molares or other beaks having the internal angled concavity, thereby bringing the beak to two sharp angular points. Sixth, constructing the beaks so as in all cases to act only on the roots, the same forceps being applicable either for teeth or roots, or children's teeth. Seventh, making the handles and bodies of the instruments all of one particular shape, the curved shape giving the operator sufficient direct pressure to fix the instrument and remove the tooth easily, whilst his vision is unobstructed. Eighth, separating the handles from the bodies, so that one pair of handles may serve any number of heads. Ninth, separating the beaks from the body of the instrument, one head or body serving any number of beaks. Tenth, certain peculiar modes of fitting the handles and beaks. Eleventh, the insertion of small screw corrugated or serrated wedges in roots where great decay has taken place to prevent crushing.

And in order that my said Invention may be properly understood I shall now proceed to describe the several Figures on the Sheet of Drawings hereunto attached. The fifty-two separate, combined, and detailed Figures on my Sheet of Drawings represent the chief modifications of which the extraction instruments are capable under my system of arrangement and construction. Figures 4, and 37, exhibit two arrangements of open heads from  $b$ , to  $b^1$ . The lengthening of the ends of the instrument from the joint at  $c$ , to the heads of the beaks  $b$ , allows the beaks when bent from them at a sufficient angle always to approach each other at the same angle, and the greater the length of these continuations the wider the beaks will open, without altering their inclination towards each other. These open heads enable the operator to see the tooth or root during the entire operation, and by lengthening the posterior parts of the beaks from the curve or bend (from  $b$ , to  $c$ , Figures 4, and 37), or lengthening the instrument from the joint towards the beaks the lengthenings or con-



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tinuations *c*, to *b*, running parallel or otherwise, and bending or curving the beaks from these continuations at any angle sufficient to allow the distance from the heads *b*, of the beaks to be relatively proportional to that of the points *a*, when opened to receive any sized tooth, or that  
5 when the beaks may be opened so far as necessary in any case to embrace a tooth that the angle of their meeting or approximation may continue the same or very nearly so, the effect is greatly improved. In Figures 4, 36, 37, and other details on the Sheet *b*, to *b*<sup>1</sup>, more of the points *a*, to *a*<sup>1</sup>, meet, and others only approximate, but the inclination of  
10 the angle of opening or divergence may be increased or diminished should it be found necessary. The opening of the heads of the beaks parts at any angle with the meeting of their points. The beaks may be so inclined that their points embrace only the roots, the head or crown of the tooth being free from pressure, preventing it being broken,  
15 and if the angle be properly inclined to the tooth or root to be removed the firm pressure of the beaks upon the root or roots will of itself, in most cases, be sufficient for their extraction. In Figure 2, there are two angular concavities converging from the point *a*, to the head *b*, of the beak where they meet; while at the point *a*, their inner walls lying  
20 against each other form the angled ridge tapering to a point at the head *b*, of the beak. See the same in Figures 4, 18, and 20. Figures 38, and 44, shew the two angular concavities running parallel to each other from the point *a*, to about one half the length of the beaks. Figures 8, 9, 12, 13, 30, and 34, shew the inside of beaks, with one angled concavity  
25 running from the point *a*, about one third the length of the beak; while Figures 40, and 42, shew the angled depression running the whole length of the beak *a*, to *b*. In angling the inside concavity of the beaks, and with curves the same way situated as these angles are, the angles allowing them to grasp firmly any sized root by bearing upon it in four  
30 different places, as in forceps No. 2, 3, 7, and 8. Figures 6, 7, 8, 9, 10, and 11, shew the beaks angle-pointed, and 6, 10, and 35, and 36, *a*, shew the outside angled ridge brought to a sharp and as much of a cutting edge as possible, so that they may be easily and quickly forced between the jaw and the root, whether the latter be large or small. See  
35 forceps Numbers 2, 3, 7, and 8. Figures 16<sup>(B)</sup>, 17, 19<sup>(A)</sup>, 20<sup>(A)</sup>, 21<sup>(A)</sup>,



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and 22<sup>(A)</sup>, shew the cleft in the palatine beaks of forceps for the extraction of the upper molars. In 47, 48, 49, and 50, the cleft is in the beaks with the angled concavity: 46, shews it in a beak with curved concavity. Thus by making an angular or other cleft in the point of the palatine beak of forceps for the extraction of the upper molars, or in any other beak or beaks having the "inside angled concavity," I bring the beaks to two sharp or angular points. In Figures 17, and 26, the angular ridges are seen inside of the cleft, and Figures 16 (B), 20, 21, and 22 (A), and 24, and 25, (A, and B,) shew various views of the same. Figure 46, shews a modification of the ridges in a beak with curved concavity, and the same in 48, which is angled the whole length of the beak *a*, to *b*. In 41, and 43, we have the same as in 26, only the beaks are continued to a point instead of being cleft. Thus I make on the inside of a point or points of any beak, cleft, or otherwise a smooth sharp edged barb or barbs, or chisel pointed or angled ridge or ridges to act as barbs, to allow the beak to glide along to the apex of the root, but preventing its returning or slipping back towards the base of the root. In cases where lateral or vertical force may be required, see the palatine beaks of forceps, Figures 17, and 20 (A), and both beaks of forceps, Figures 25, and 26, and 48, and modifications of forceps, Figure 46, and modifications of forceps, Figures 41, and 43, in which the angled ridges are similar to those in the others, only each of these beaks is continued to a single point instead of being cleft; these ridges also allow the beaks freely to cut through the alveolar process, when necessary, preventing it from being torn, and more removed than may be proper. This enables beaks to embrace and hold roots over which single pointed beaks have no power, as in forceps for the extraction of the upper molars, of which the inner or palatine root generally lies at a considerable angle with the two outer roots. The cleft allows it to embrace the root at or above its junction with the others, while the ridges inside the cleft secure a firm hold, allowing the forceps to remove the three roots at once, although they be minus the head. The same cleft and ridges in both beaks of forceps, No. 6, fit it for extraction of the upper bicuspid, when the root divides into two with considerable divergence (in such cases no other forceps can remove



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it), and for the extraction of the palatine root of the upper molars, when joined only to one of the outer roots, or for the upper wisdom tooth (or third molar), when the posterior outer root is suspected to be only partially developed. The angle of approximation of the points of all these beaks 5 (as Figure 36, *b, a, b'*,) prevents them crushing the head of any tooth, and their length and breadth are sufficient for a large tooth, and not too large for small teeth. In all cases the beaks act only upon the roots in such a manner that the same forceps may extract teeth, roots, or children's teeth. In Figures 1, and 35, the distance from the end of 10 the handle *d*, to the point of the beak *a*, will, as near as possible, be the base of a quadrant, which will pass through the greater part of the instrument, entering at the point of the handle *d*, and passing through the point of the beak *a*. When the instrument is held in the hand the whole of the handle or one half of the quadrant is embraced by the 15 hand, the thumb resting upon the radius, which would bisect and be perpendicular to the base, so that when the beaks of the instrument are forced down the power and force applied is nearly the same, and in the same direction as if the said radius were fixed at the centre of the circle, and a force applied to raise the end represented by the handles (*d, f*;) 20 would depress the ends similar to the beaks (*a, b*), so that all the power used is applied (all things considered) to the greatest advantage. In the extractive effort the depressing of the handles will, for the same reason, raise the beaks. In using the instrument for the upper jaw the handles are held as for the lower jaw, as in Figure 19, and the same 25 supposed rotation comes into play, the depressing of the handles forcing the beaks upwards, and in addition to this give the power of direct pressure, the force applied through the handles being as near as possible as if transmitted through the length of the beaks (*a*, to *b*, Figure 19); for a line bisecting the beaks longitudinally has a parallel to it through 30 the lower half of the handle, or the power applied through the handles may be bisected by the parallel, so that the force may be nearly as if given in a straight line. This enables the beaks to be made moveable, the same shape of handle answering for the upper or lower jaw. I prefer to have the handles and body of the forceps of or approxi- 35 mating to the particular shape as delineated at (Fig<sup>s</sup> 1, & 19, A,



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to *d*,) and to use it in the extraction of any tooth, it giving sufficient direct pressure to fix the instrument, and easily to remove any tooth or root, at the same time preventing the hand from obstructing the vision. The four front teeth, the eye teeth, and bicuspid (or small grinders) of the upper jaw being generally removed by straight forceps, which do 5 not permit the extraction of these teeth to be humoured. This objection is also applicable to the forceps used for the same teeth in the lower jaw, the bend of the instrument generally only allowing the teeth to be removed in one direction, while this shape facilitates their extraction in any direction. In Figures 51, 52, and 53, 52, is the handle 10 detached; 53, is a front view, shewing the manner in which the cylindrical shaft *g, h*, of Figure 51, locks into it at *l*, to prevent rotation; 51, shews the handle *d, f*, fixed, and prevented from slipping off by the small spring catch *K*. Thus by separating the handles from the body- or head of the instrument one pair of handles serves for any number of 15 heads. Figure 2, represents the square shaft of a beak kept from slipping out by the spring catch *K*, which is freed by depressing the button *M*, (on the top of the instrument.) Figure 5, is a front view of the end of the head without the beaks; Figure 3, the same, with the beaks inserted; Figure 51, shews the beak fixed in the same manner 20 as the handle *d, f*, with a slight modification of the spring catch, as in Figure 2. By separating the beaks from the body or head of the instrument, one head answering any number of beaks. This modification causes the instruments to take up little space, and reduces the weight to a minimum, so that weight and bulk can be no objection to their 25 being adopted in a visiting practice. Figures 49, and 50, shew a beak like 47, fitted to the elevator handle, and kept in its place by the spring catch *K*; as in Figures 49, and 50, any beak may be made moveable or immoveable as part of the elevator. I adapt the shape of any of these forceps beaks to any form of elevator. This is useful in cases 30 where one side of a root may be so far decayed that the forceps would cause unnecessary pain to be forced sufficiently far to embrace both sides of the root. I also cause small detached wedges, screwed, corrugated, or serrated, to be inserted according to size in roots where decay has produced great concavity, preventing the forceps crushing the roots 35



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before the beaks have time to slip on to the more solid parts of the roots. In forceps Number 1, is a side view; Figure 2, the inside of the beak; Figure 3, a front view; and Figure 4, one looking from above downwards; 38, and 39, are modifications of these beaks. In 38, the  
5 angular concavities running parallel one half the length of the beak. In 39, the concavities are curved. Forceps Number 2, Figure 6, shews the point of the beak angled and sharp towards the point  $\alpha$ , to cut, instead of tearing asunder any part of the gum or alveolar process; 7, front view; 8, looking down upon; 9, the inside of the beak shewing the point  
10  $\alpha$ , and angled depression. 40, and 41, are modifications; 40, has the angled concavity continued to the head of the beak; 41, is the same as 9, but has in addition the angled ridges something the same as in 26, only not so apparent in the Drawing, the depression not being so deep, and the beak not being cleft, but continued to a point, the outside  
15 towards the point being sharp so as to cut. The angling (from  $100^\circ$  to  $120^\circ$ ) causes the beak to fit the side of any root, without the same risk of slipping as a curve sufficiently shallow and narrow for general application would when a horizontal rotary motion is given to start the root or roots (I have not found this motion described in any work), and  
20 the double angles with angled ridge between (Figure 2), and particularly those running parallel. Figures 38, and 44, prevent the beak in the same horizontal rotary motion from slipping beyond either of the roots in the double rooted teeth (or where one beak bears upon two roots), and catching the root of a neighbouring tooth, and, perhaps, bring  
25 it out also. This improvement, with the others, is intended to make these forceps of general application, or competent in every case. Forceps Number 3, Figures 10, 11, 12, and 13, are the same as 6, 7, 8, and 9, respectively; and 42, the modification the same as 40, and 43, like 41, only the beaks are smaller. Forceps Number 4, Figure 14, shews the  
30 outside of the beak (A,) which embraces the two outer roots, and part of the inside of the palatine beak (same as B, Figure 15); Figure 15, a front view of both beaks, shewing the angled cleft in the palatine beak (B); Figure 16, looking down upon the instrument; Figure 17, shews the cleft and angular ridges inside the palatine or inner  
35 beak (B); Figure 18, the inside of the beak, with the angled ridge in the middle, forming with the sides the angled depressions for



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embracing the two outer roots. Modifications, see forceps 5. Forceps Number 5, Figure 19, side view of the palatine beak A, and its cleft from the outside at *a*, and one half of the inside of the beak for the outer roots (the same as B, Figure 20); Figure 20, the instrument inverted, and looking from above, shewing so much as possible 5 the inside of both beaks; Figure 22, the instrument in its proper position, and seen from above; Figures 44, and 45, are modifications of the beaks for the outside roots. In 44, the angled ridge and depressions run parallel half the length of the beak. In Figure 45, the depressions for the roots are curved to answer most roots (if not all roots). 10 Figure 46, is a modification of the beak for the palatine root, the inside, as seen, being hollowed out a little, and the angled ridges running close alongside of the angled cleft. Forceps Number 6, Figure 23, a side view; 24, front view; 25, seen from above, each shewing the angular cleft in both beaks; Figure 26, the inside of one of the beaks, 15 shewing the relation of the angular cleft and ridges. Forceps Number 7, Figure 27, side view, with sharp angled edge, as in forceps Number 2, Figure 6. Figure 28, front view; 29, seen from above; 30, the inside, with angled depression and sharp point. The modifications of this are the same as those contained in Figures 40, and 41, see forceps 20 Number 2. Forceps Number 8, Figures 31, 32, 33, and 34, are the same respectively as 27, 28, 29, and 30, only the beaks are smaller. The modifications are also the same, see forceps Number 7. The following summary refers expressly to the various Figures on my Sheet of Drawings:—Figures 1, 2, 3, and 4, are views of forceps Number 1. 25 Figure 5, front view of end of head without the beaks. Figures 6, 7, 8, and 9, see forceps Number 2. Figures 10, 11, 12, and 13, see forceps Number 3. Figures 14, 15, 16, 17, and 18, see forceps Number 4. Figures 19, 20, 21, and 22, see forceps Number 5. Figures 23, 24, 25, and 26, see forceps Number 6. Figures 27, 28, 30 29, and 30, see forceps Number 7. Figures 31, 32, 33, and 34, see forceps Number 8. Figure 35, is a side view of forceps Number 2, with the body and beaks made in one or immoveable; Figure 36, front view of the same. Figure 37, the same viewed from above. Figures 35, 36, and 37, are only given as an example of these beaks 35 made inseparable from the body, all the other details being the same



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for the eight pairs of forceps intended for a consulting practice ; those with moveable heads being only made so for a visiting practice. Figures 38, and 39, are modifications of the beaks of forceps Number 1, Figure 2. Figures 40, and 41, are modifications of the beaks of 5 forceps Number 2, Figure 9. Figures 42, and 43, are modifications of beaks of forceps Number 3, Figure 13. Figures 44, and 45, are modifications of the beaks for the two outside roots in forceps Number 4, and 5, Figures 18, and 20, (B). These modifications are only shewn for the outside beak of forceps Number 5 ; those for 10 Number 4, would be the same, only lying in the same direction as Figure 46. Figure 46, is modification of the palatine beak of forceps Number 5. Figure 17, the palatine beak of Number 4, the modification of which would lie in the same direction as Figure 17 ; see explanation to forceps Number 4, and 5. Figures 47, and 48, are 15 modifications of the beaks of forceps Number 6, Figure 26. Figures 49, and 50, present a beak like Figure 47, in an elevator handle, and retained by a spring catch, Figures 51, 52, and 53. The beaks A, B, in Figure 51, are same as Figure 39. These three last Figures have been already explained herein.

20 Having now described and particularly ascertained the nature of my Invention, and the manner in which the same is or may be used or carried into effect, I may observe, in conclusion, that I do not confine or restrict myself to the precise details or arrangements which I have had occasion to describe or refer to, as many variations may be made 25 therefrom without deviating from the principles or main features of my Invention.

In witness whereof, I, the said James Anderson Young, have hereunto set my hand and seal, this Twenty-ninth day of March, in the year of our Lord One thousand eight hundred 30 and fifty-three.

JAMES A. YOUNG. (L.S.)

LONDON :

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Fig. 1.

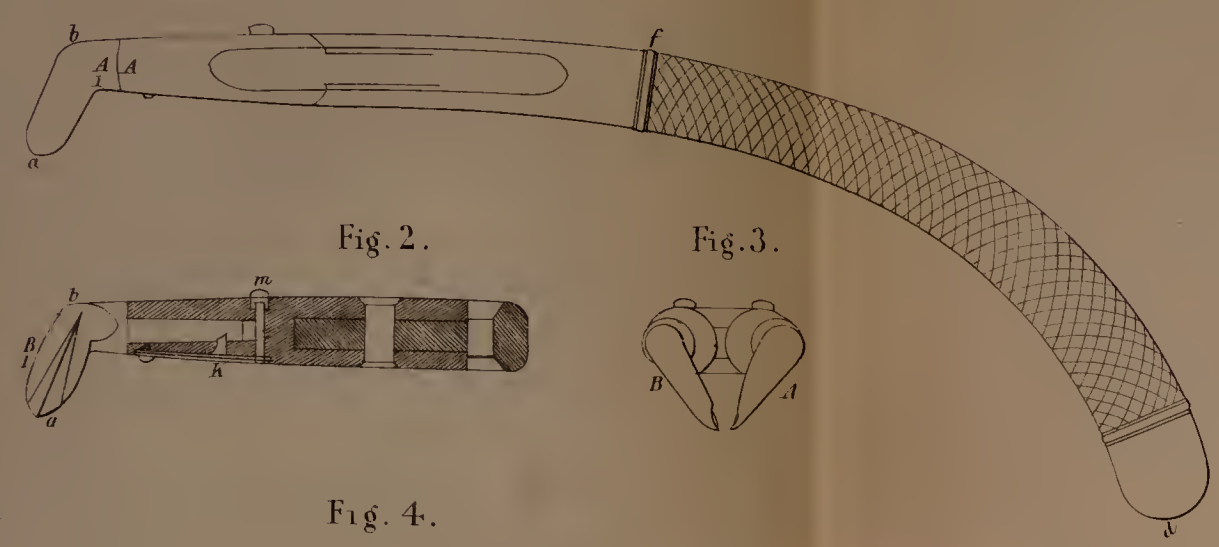


Fig. 2.

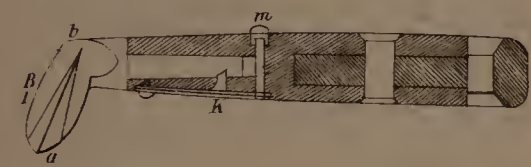


Fig. 3.

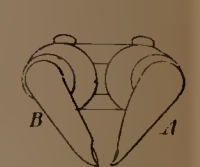


Fig. 5.

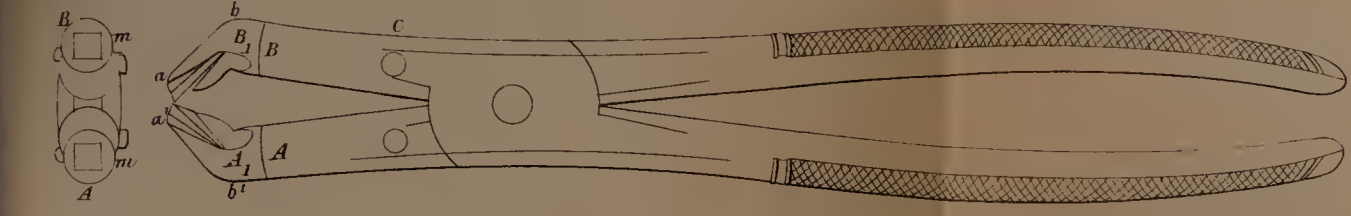


Fig. 4.

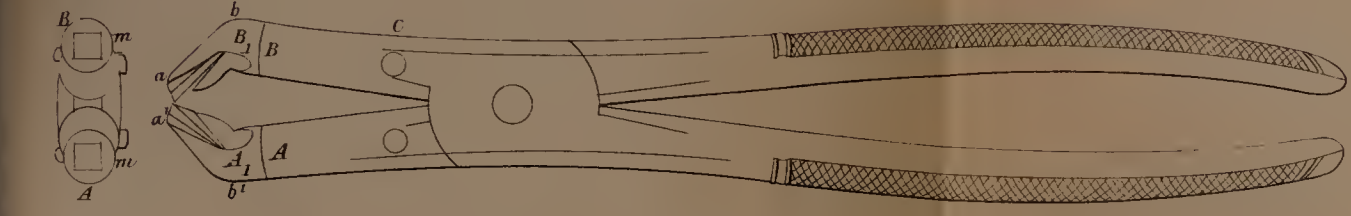


Fig. 6.

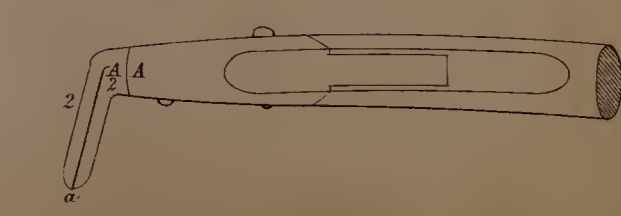


Fig. 7.

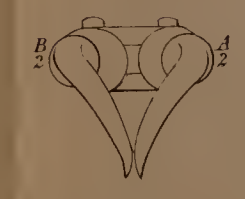


Fig. 8.

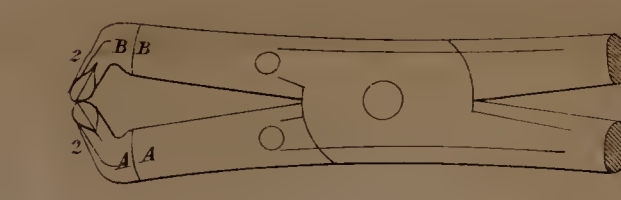


Fig. 9.

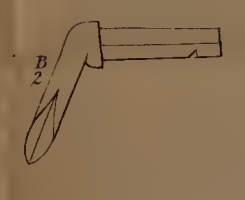


Fig. 10.

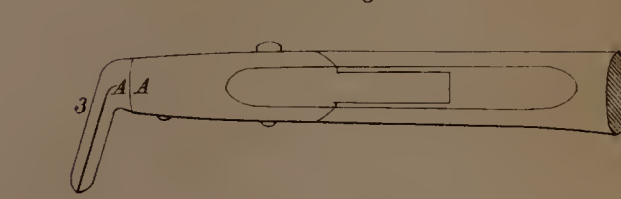


Fig. 11.

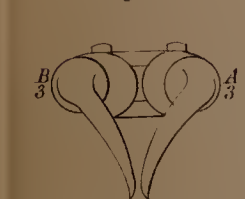


Fig. 12.

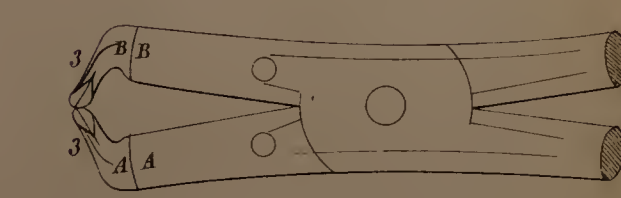


Fig. 13.

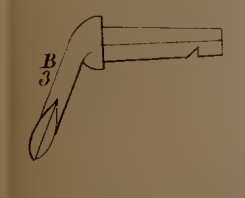


Fig. 14.

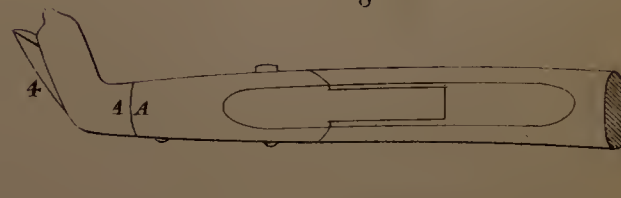


Fig. 15.

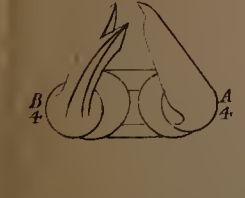


Fig. 16.

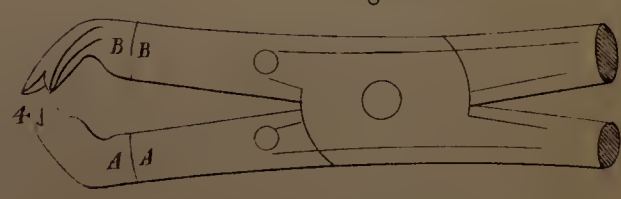


Fig. 17.



Fig. 18.

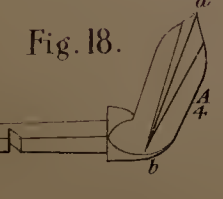


Fig. 19.

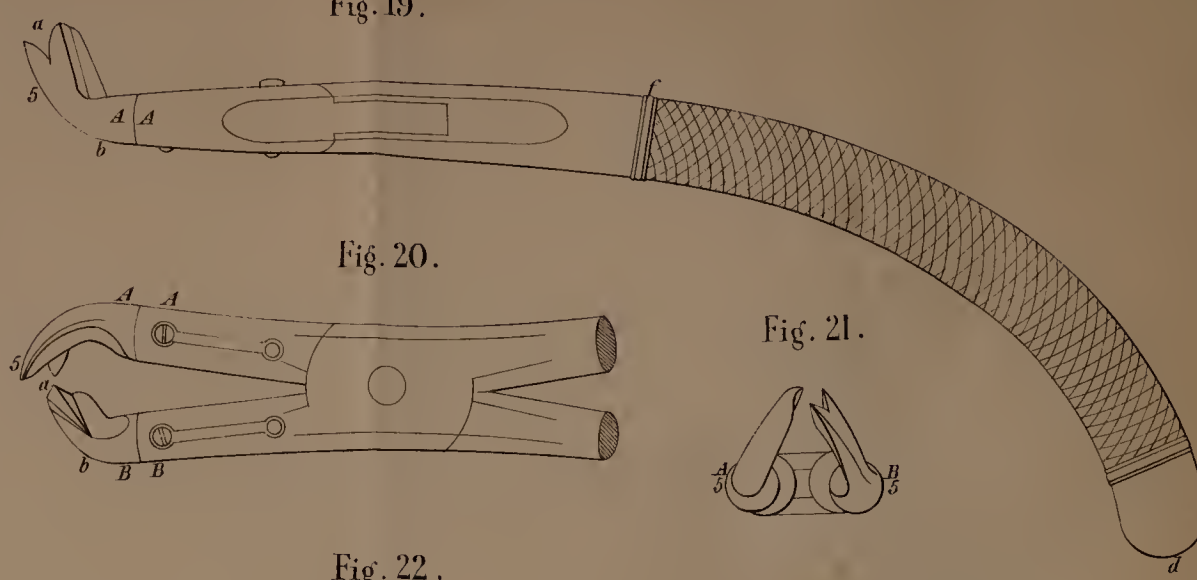


Fig. 20.

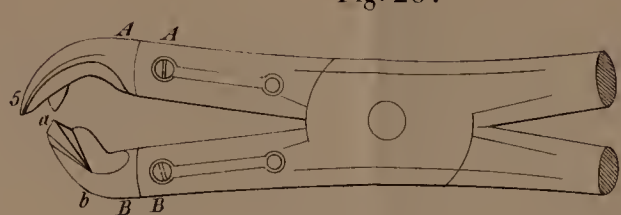


Fig. 21.

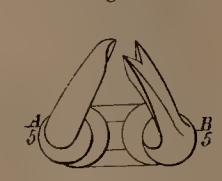


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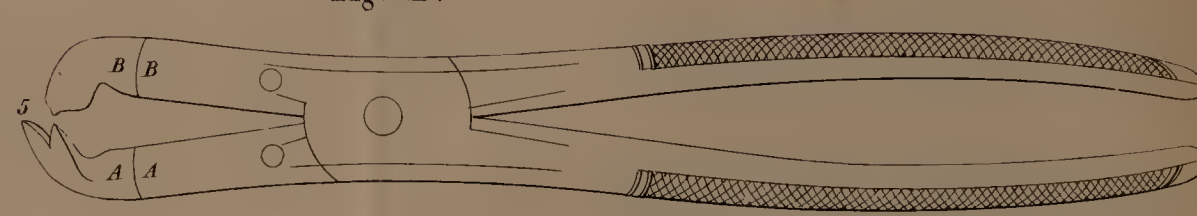


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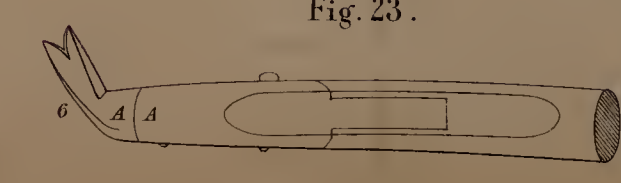


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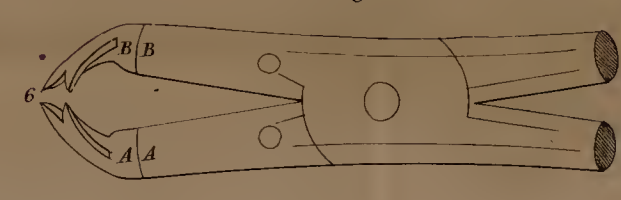


Fig. 27.

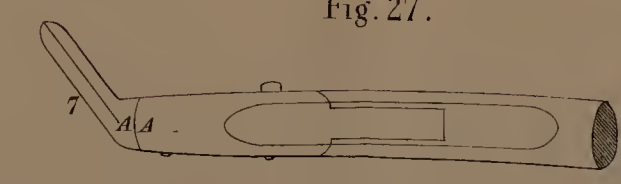


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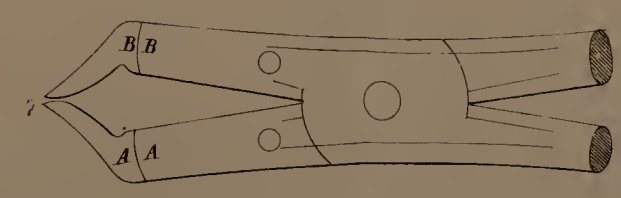


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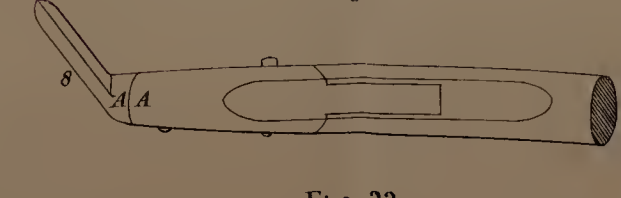


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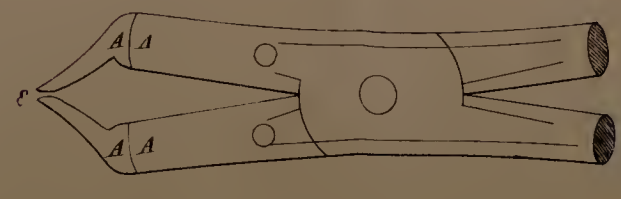


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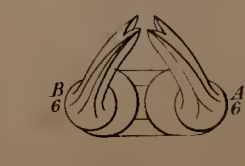


Fig. 26.



Fig. 28.

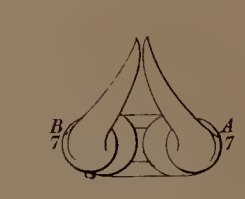


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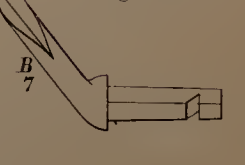


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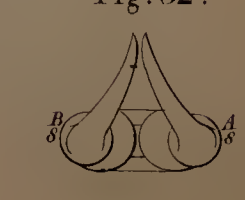


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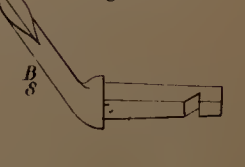


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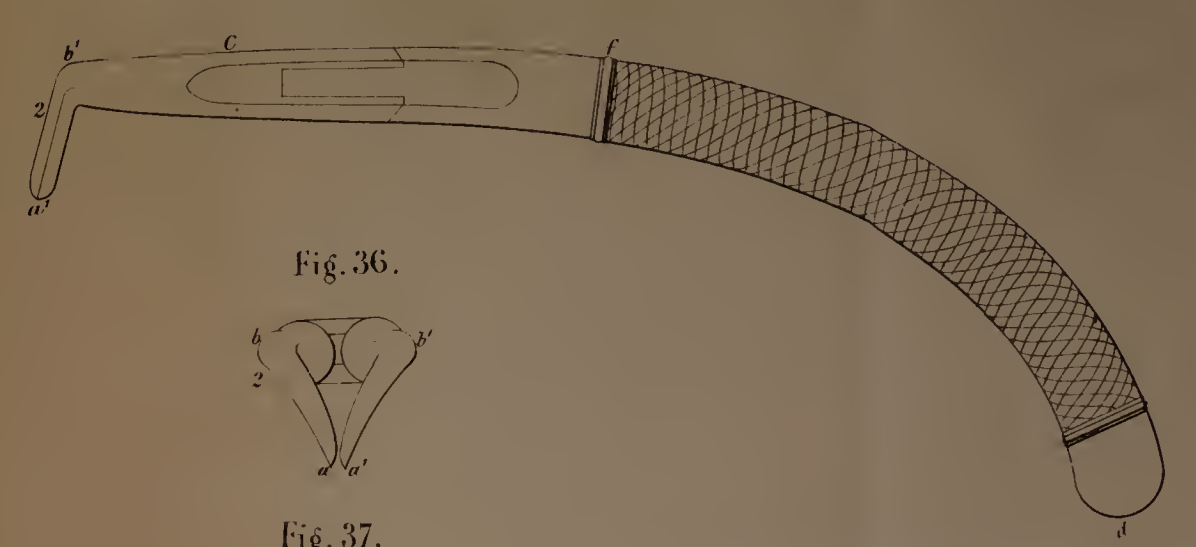


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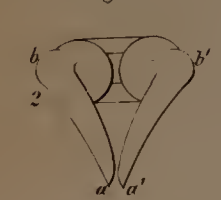


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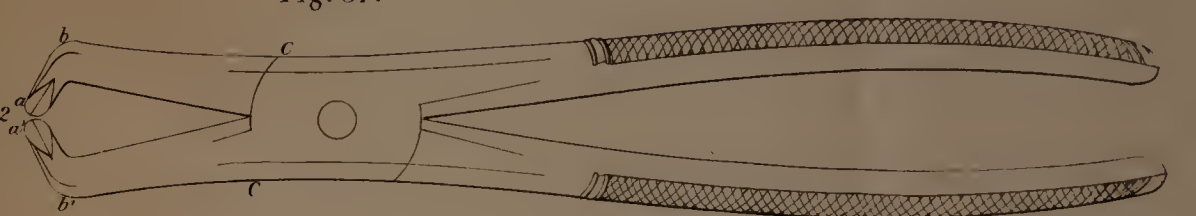


Fig. 38.

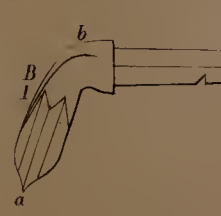


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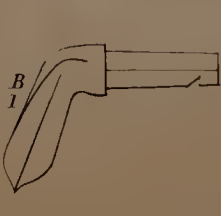


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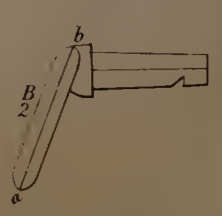


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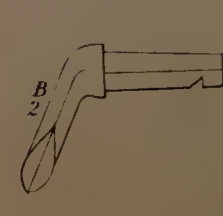


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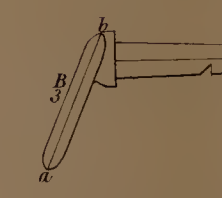


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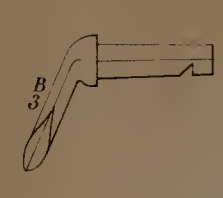


Fig. 44.

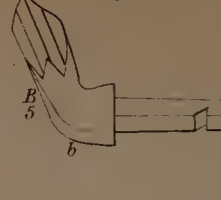


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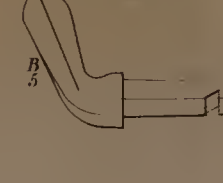


Fig. 46.

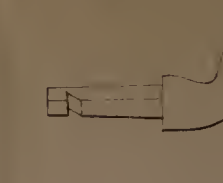


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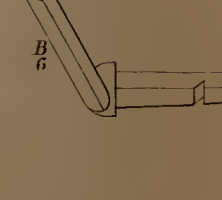


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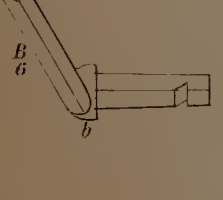


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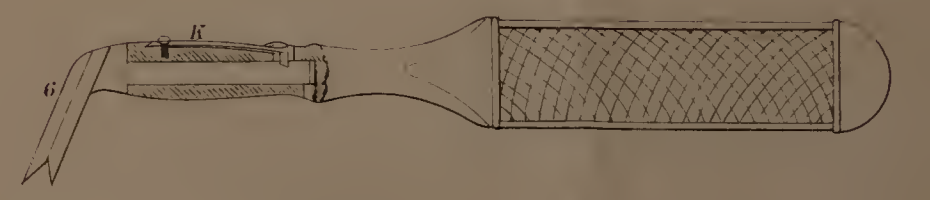


Fig. 50.

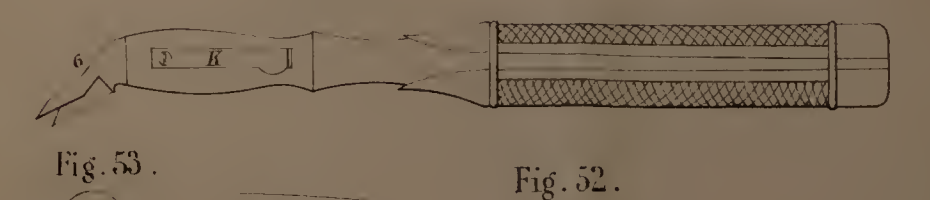


Fig. 53.



Fig. 52.

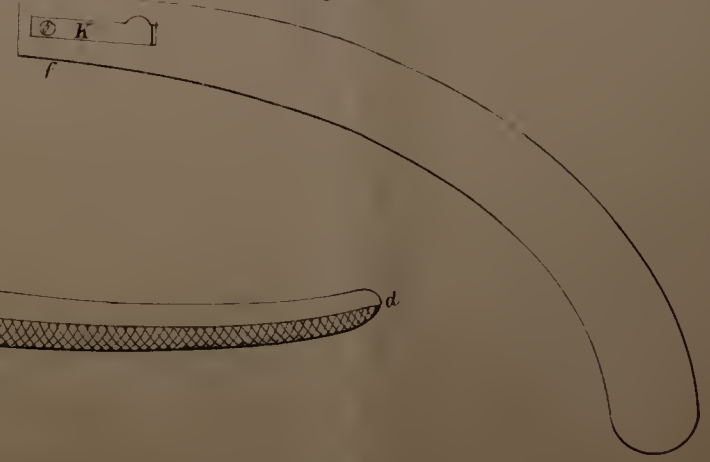
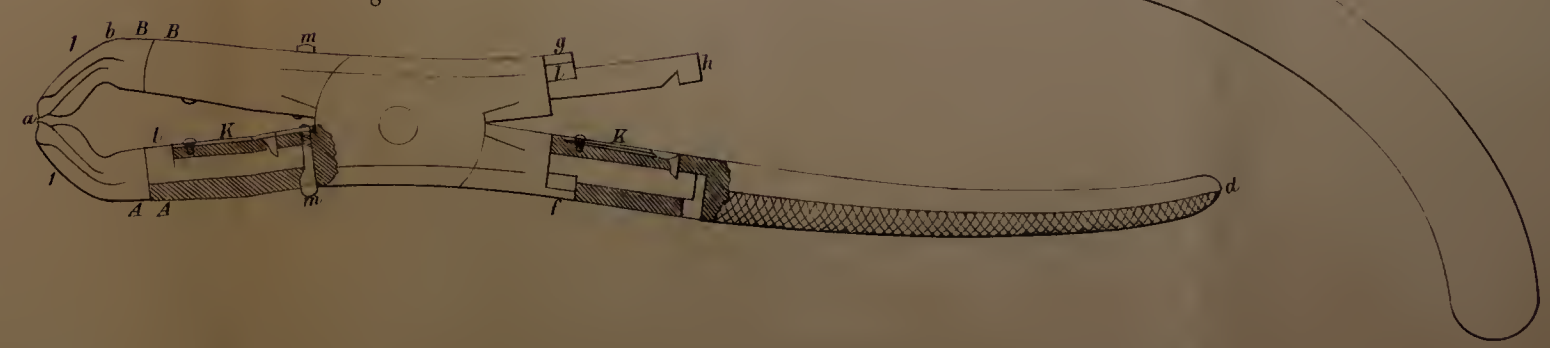


Fig. 51.



Drawn full size.

